

CLAIMS

What is claimed is:

1. A method for treating airway remodeling in an individual suffering from chronic asthma, the method comprising administering to the individual an effective amount of a toll-like receptor (TLR) agonist, wherein at least one pathological parameter associated with airway remodeling is reduced.
2. The method of claim 1, wherein the TLR is TLR9, and the TLR agonist is a nucleic acid that comprises the sequence 5' CG 3'.
3. A method for treating interstitial lung fibrosis in an individual, the method comprising administering to the individual an effective amount of a toll-like receptor (TLR) agonist in an amount effective to treat the disorder.
4. The method of claim 3, wherein the lung fibrosis is associated with a condition selected from idiopathic pulmonary fibrosis, sarcoidosis, chronic obstructive pulmonary disease, cystic fibrosis, chronic exposure to an irritant, chronic viral infection of the lungs, chronic mycoplasma infection of the airways, and chronic bacterial infection of the lungs.
5. The method of claim 3, wherein the TLR is TLR9, and the TLR agonist is a nucleic acid that comprises the sequence 5' CG 3'.
6. The method of claim 2 or claim 5, wherein the nucleic acid comprises a nucleotide sequence selected from 5'-purine-purine-cytosine-guanine-pyrimidine-pyrimidine-3', 5'-purine-TCG-pyrimidine-pyrimidine-3', and 5'-(TGC)_n-3', where $n \geq 1$.
7. The method of claim 2 or claim 5, wherein the nucleic acid comprises a nucleotide sequence of the formula 5'-TCG-N-N-3'; where n is any base.

8. The method of claim 2 or claim 5, wherein the nucleic acid comprises a nucleotide sequence of the formula 5' N_m-(TCG)_n-N_p-3', wherein N is any nucleotide, wherein m is zero, one, two, or three, wherein n is any integer that is 1 or greater, and wherein p is one, two, three, or four.

9. The method of claim 2 or claim 5, wherein the nucleic acid comprises a nucleotide sequence of the formula 5' N_m-(TCG)_n-N_p-3', where N is any nucleotide, wherein m is zero to 5, wherein n is any integer that is 1 or greater, wherein p is four or greater, and wherein the sequence N-N-N-N comprises at least two CG dinucleotides that are either contiguous with each other or are separated by one nucleotide, two nucleotides, or three nucleotides.

10. The method of claim 1 or claim 3, wherein the TLR agonist is administered to the respiratory tract of the individual.

11. The method of claim 1 or claim 3, wherein the TLR agonist is administered intranasally.

12. The method of claim 1 or claim 3, wherein the TLR agonist is administered systemically.

13. The method of claim 1 or claim 3, further comprising administering an effective amount of an anti-inflammatory agent.

14. The method of claim 3, further comprising administering an effective amount of a corticosteroid.

15. The method of claim 11, wherein the corticosteroid is prednisolone.

16. The method of claim 3, further comprising administering an effective amount of IFN-γ.

17. The method of claim 3, further comprising effective amounts of a corticosteroid and IFN- γ .

18. A pharmaceutical formulation for treatment of lung fibrosis, comprising:
a therapeutically effective amount of toll-like receptor (TLR) agonist; and
a flowable formulation suitable for delivery by inhalation.

19. The pharmaceutical formulation of claim 18, wherein the TLR agonist is formulated with a fluid carrier and a propellant.

20. The pharmaceutical formulation of claim 18, wherein the TLR agonist is formulated in an aqueous or an ethanolic solution.

21. The pharmaceutical formulation of claim 18, wherein the TLR agonist is in a dry powder formulation.

22. The pharmaceutical formulation of claim 18, wherein the TLR agonist is aerosolized to create an aerosol.

23. A package for use in treating lung fibrosis, comprising a container having therein a flowable formulation suitable for delivery by inhalation, the formulation comprising a pharmaceutically active toll-like receptor agonist.